manner, the OFF current of the TFTs of the active matrix section are suppressed to be sufficiently low, and generation of crosstalk or the like can be prevented.

Finally, as shown in FIG. 19E, an insulating interlayer **76** is formed, and a wiring structure is constituted by a metal thin film **77**, pixel electrodes are constituted by a transparent conductive film **79** or the like, and a passivation film **78** is formed. As a result, an active matrix substrate in which a data driver is integrally formed is completed. The substrate is subjected to an aligning process, and a counter substrate subjected to the same aligning process is caused to oppose the substrate. A liquid crystal is sealed between these substrates, so that a liquid crystal display device is completed.

Embodiment 6

Embodiment 6 is an embodiment related to an information processing apparatus (multi-media terminal or the like) including a liquid-crystal display device and an image signal output device for outputting an image signal given to the liquid-crystal display device. FIG. **20** shows an arrangement of Embodiment 6.

A liquid-crystal display device **700** includes an active matrix section **710** in which data drivers **702** and **704**, a gate driver **706**, a TFT **708**, and the like are formed. As an image information reproducing device **720**, for example, a DVD, a CD-ROM, a digital video cassette recorder, or the like may be used. Static image information of, e.g., the JPEG standards output from the image information reproducing device **720** is input to a static image information decoder **722**. The static image information decoder **722** decodes the static image information which is subjected to compression or the like of the JPEG standards to output a digital YUV signal. Similarly, moving image information of, e.g., the MPEG standards output from the image information reproducing device **720** is input to a moving image information decoder **724**. The moving image information decoder. **724** decodes the moving image information which is subjected to compression or the like of the MPEG standards to output a digital YUV signal. On the other hand, as a computer processing image storage device **726**, a VRAM or the like may be used. A digital RGB signal is output from the computer processing image storage device **726**.

A digital YUV signal output from a first image signal output device (the image information reproducing device **720**, the static image information decoder **722**, and the moving image information decoder **724**) and a digital RGB signal output from a second image signal output device (the computer processing image storage device **726**) are input to an image signal selector **728**. One of the YUV signal and the RGB signal is selected to be input to the data drivers **702** and **704**. Input/output timings of the signals are controlled by an RGB/YUV timing controller **730** and a computer **732**.

The data drivers **702** and **704** include means which, when digital data of the YUV signal is input, directly convert the digital data into analog applied voltages for red, green, and blue to output the analog applied voltages and, when digital data of the RGB signal is input, convert the digital data into analog applied voltages for red, green, and blue to output the applied voltage. As such means, means having the arrangement described in FIG. **17** is especially preferable. However, means having an arrangement other than the arrangement can be employed. When the means is arranged in the data driver, the data driver can be entirely constituted by a digital-base circuit, and the device can be reduced in power consumption, scale, and the like.

It is preferable to integrally form the data drivers **702** and **704** and the gate driver **706** on a substrate on which the active matrix **710** is formed. In addition, the static image information decoder **722**, the moving image information decoder **724**, the image signal selector **728**, and the RGB/YUV timing controller **730** may be incorporated in a data driver, so that the data driver may be integrally formed on a substrate on which the active matrix **710** is formed.

The present invention is not limited to Embodiments 1 to 6 described above, and various modified embodiments can be effected within the range of the spirit and scope of the invention.

For example, the above embodiments describe a case wherein the present invention is applied to γ-correction of a liquid crystal and YUV/RGB conversion. However, the present invention can be applied to other various conversion processes.

The present invention can also be applied to a display element driving device other than a data driver, a display device other than a liquid-crystal display device, and an information processing apparatus other than a multi-media terminal. In addition, the present invention can be applied to not only active-matrix-type liquid-crystal display devices using thin-film transistors, thin-film non-linear elements (e.g., MIMs), and the like and data drivers for the active-matrix-type liquid-crystal display devices, but also all liquid-crystal display devices including simple-matrix-type liquid-crystal display devices and data drivers for the liquid-crystal display devices.

What is claimed is:

1. A display element driving device comprising:

a D/A converter for applying a voltage based on a given image signal to an electrode line that is electrically connected to a capacitive display element having one side to which a given voltage is applied, wherein said D/A converter includes:

first charge storage means for receiving image digital data corresponding to the image signal and for storing a charge corresponding to a value of the image digital data;

second charge storage means for receiving correction digital data for compensating for display characteristics of said display element and for storing a charge corresponding to a value of the correction digital data;

first connection means for electrically connecting said first charge storage means to said electrode line and for discharging the charge stored in said first charge storage means to said electrode line at a given timing; and

second connection means for electrically connecting said second charge storage means to said electrode line and for discharging the charge stored in said charge storage means to said electrode line at a substantially same timing as the given timing.

2. The display element driving device according to claim **1**, wherein when a change value of the applied voltage obtained when a least significant bit of the image digital data changes is represented by V1, and a change value of the applied voltage obtained when a least significant bit of the correction digital data changes is represented by V2, a relationship of $V1>2\times V2$ is established.

3. The display element driving device according to claim **1**, wherein when the number of bits of the image digital data is represented by m, and the number of bits of the correction digital data is represented by n, then a relationship of $m \geqq n$ is established.

4. A display device comprising:

a display element driving device, the display element driving device including a D/A converter, the D/A converter having a first section for receiving image digital data and a second section for receiving correction digital data for compensating the image digital data for a display characteristic of the display element;

a display element driven by said display element driving device; and

a substrate on which a switching element selecting a display element and including a thin-film transistor or a thin-film non-linear element is formed,

an output voltage from the D/A converter based on the image digital data and correction digital data being applied to an electrode line, and said display element driving device being integrally formed on said substrate.

5. An information processing apparatus comprising said display device according to claim 4 and at least one image signal output device for outputting an image signal to said display device.

6. A display device comprising:

a display element driving device, the display element driving device including a D/A converter, the D/A converter having a first section for receiving image digital data and a second section for receiving correction digital data for compensating the image digital data for a display characteristic of the display element; and

a display element driven by the display element driving device,

an output signal from the D/A converter based on the image digital data and the correction digital data being supplied to the display element through an electrode line.

7. A display element driving method for applying a voltage based on a given image signal to an electrode line electrically connected to a capacitive display element having one side to which a given voltage is applied, the method comprising the steps of:

inputting image digital data corresponding to the image signal to first charge storage means, and storing a charge corresponding to a value of the image digital data in said first charge storage means;

inputting correction digital data for compensating for display characteristics of said display element to second charge storage means, and storing a charge corresponding to a value of the correction digital data in said second charge storage means, wherein said first charge storage means is electrically connected to said electrode line and the charge stored in said first charge storage means is discharged to said electrode line at a given timing, said second charge storage means and said electrode line are electrically connected to each other, and the charge stored in said charge storage means is discharged to said electrode line at a same timing as the given timing.

8. A display element driving device comprising:

a D/A converter for applying a voltage based on a given image signal to an electrode line that is electrically connected to a capacitive display element having one side to which a given voltage is applied, wherein said D/A converter includes:

first charge storage capacitor that receives image digital data corresponding to the image signal and that stores a charge corresponding to a value of the image digital data;

second charge storage capacitor that receives correction digital data for compensating for display characteristics of said display element and that stores a charge corresponding to a value of the correction digital data;

first switch that electrically connects said first charge storage capacitor to said electrode line and that discharges the charge stored in said first charge storage capacitor to said electrode line at a given timing; and

second switch that electrically connects said second charge storage capacitor to said electrode line and that discharges the charge stored in said charge storage capacitor to said electrode line at a substantially same timing as the given timing.

9. A display element driving device, comprising:

a D/A converter to apply a voltage based on a given image signal to an electrode line that is electrically connected to a capacitive display element having one side to which a given voltage is applied, the D/A converter including:

a first charge storage device to receive first digital data associated with the image signal and to store a charge corresponding to a value of the first digital data;

a second charge storage device to receive second digital data associated with the image signal and to store a charge corresponding to a value of the second digital data;

a first connection device to electrically connect the first charge storage device to the electrode line and to discharge the charge stored in the first charge storage device to the electrode line at a given timing; and

second connection device to electrically connect the second charge storage device to the electrode line and to discharge the charge stored in the second charge storage device to the electrode line at a substantially same timing as the given timing.

10. The display element driving device according to claim 9,

the first digital data being image digital data corresponding to the image signal; and

the second digital data being correction digital data to compensate for display characteristics of the display element.

11. The display element driving device according to claim 9, the D/A converter further comprising:

third to Nth charge storage devices to respectively receive third to Nth digital data associated with the image signal and to store charges corresponding to values of the third to Nth digital data; and

third to Nth connection devices to electrically connect the third to Nth charge storage devices and the electrode line and to discharge the charges stored in the third to Nth charge storage devices to the electrode line at a substantially same timing as the given timing.

12. The display element driving device according to claim 11,

the first to Nth charge storage devices storing the charges based on the first to Nth digital data and at least one given voltage.

13. The display element driving device according to claim 11,

the first to Nth charge storage devices including capacitor elements having one side to which a given voltage is applied and capacitances which are binarily weighted, and

the first to Nth connection devices including switches to electrically connect the other side of the capacitive elements and the electrode line at a same given timing.

14. The display element driving device according to claim 13,

the first to Nth charge storage devices selecting at least one capacitor element from the capacitor elements to store a charge based on the first to Nth digital data, and storing a charge in the selected capacitor element at at least one given voltage.

15. The display element driving device according to claim 13,

digital data having a complementary format of 2 being input as the first to Nth digital data, and

the capacitance of the capacitor element corresponding to a most significant bit of digital data among the capacitor elements included in at least one of the first to Nth charge storage devices being made equal to the capacitance of a capacitor element corresponding to a least significant bit.

16. The display element driving device according to claim 13,

digital data having a complementary format of 2 being input as the first to Nth digital data, and

the capacitance of the capacitor element corresponding to a most significant bit of digital data among the capacitor elements included in at least one of the first to Nth charge storage devices being made equal to the capacitance of a capacitor element corresponding to a least significant bit.

17. The display element driving device according to claim 9, the D/A converter being a first D/A converter, the electrode line being an electrode line for red, the display element driving device applying voltages VR1, VG1, and VB1 generated based on digital data DY1, DU1, and DV1 of a YUV signal to electrode lines for red, green, and blue to which display elements are respectively electrically connected, the first D/A converter respectively receiving the digital data DY1 and DV1 and applies the voltage VR1 to the electrode line for red based on a relational expression VR1 = aDY1 + bDV1, the display element driving device further comprising:

a second D/A converter that respectively receives the digital data DY1, DU1, and DV1 and applies the voltage VG1 to the electrode line for green based on a relational expression VG1 = cDY1 + dDU1 + eDV1; and

a third D/A converter that respectively receives the digital data DY1 and DU1 and applies the voltage VB1 to the electrode line for blue based on a relational expression VB1 = fDY1 + gDU1.

18. The display element driving device according to claim 17, the electrode lines for red, green, and blue being first electrode lines for red, green, and blue, the display element driving device further comprising:

a fourth D/A converter that respectively receives digital data DY2 and applies voltages VR2, VG2, and VB2 to second electrode lines for red, green, and blue adjacent to the first electrode lines for red, green, and blue and receives the digital data DV1 and applies the voltage VR2 to the second electrode line for red based on a relational expression VR2 = aDY2 + bDV1;

a fifth D/A converter that respectively receives the digital data DY2, DU1, and DV1 and applies the voltage VG2 to the second electrode line for green based on the relational expression VG2 = cDY2 + dDU1 + eDV1; and

a sixth D/A converter that respectively receives the digital data DY2 and DU1 and applies the voltage VB2 to the second electrode line for blue based on a relational expression VB2 = fDY2 + gDU1.

19. The display element driving device according to claim 18, coefficients a, b, c, d, e, f, and g being determined by at least one given voltage and a capacitance of a capacitor element in one of the first to third D/A converters and in which a charge is stored by the given voltage.

20. The display element driving device according to claim 18, coefficients a, b, c, d, e, f, and g being determined by at least one given voltage and a capacitance of a capacitor element in one of the first to third D/A converters and in which a charge is stored by the given voltage.

21. The display element driving device according to claim 19, capacitances of capacitor elements for determining the coefficients a, b, c, d, e, f, and g being made equal to each other, and voltages for determining the coefficients a, b, c, d, e, f, and g being made different from each other.

22. The display element driving device according to claim 20, capacitances of capacitor elements for determining the coefficients a, b, c, d, e, f, and g being made equal to each other, and voltages for determining the coefficients a, b, c, d, e, f, and g being made different from each other.

23. The display element driving device according to claim 19, voltages for determining the coefficients a, b, c, d, e, f, and g being made equal to each other, and capacitances of capacitor elements for determining the coefficients a, b, c, d, e, f, and g being made different from each other.

24. The display element driving device according to claim 20, voltages for determining the coefficients a, b, c, d, e, f, and g being made equal to each other, and capacitances of capacitor elements for determining the coefficients a, b, c, d, e, f, and g being made different from each other.

25. The display element driving device according to claim 17, the display elements each being a capacitive display element that receives a given voltage,

the first and second charge storage devices to respectively receive the digital data DY1 and DV1 and for storing charges according to values of the digital data DY1 and DV1,

the first and second connection devices to electrically connect the first and second charge storage devices to the electrode line for red and to discharge the charges stored in the first and second charge storage devices to the electrode line for red at a given timing,

the second D/A converter including:

third, fourth, and fifth charge storage devices to respectively receive the digital data DY1, DU1, and DV1 and to store charges according to values of the digital data DY1, DU1, and DV1; and

third, fourth, and fifth connection devices to electrically connect the third, fourth, and fifth charge storage devices to the electrode line for green and to discharge the charges stored in the third, fourth, and fifth charge storage devices to the electrode line for green at a given timing, and

the third D/A converter including:

sixth and seventh charge storage devices to respectively receive the digital data DY1 and DU1 and to store charges according values of the digital data DY1 and DU1; and

sixth and seventh connection devices to electrically connect the sixth and seventh charge storage devices to the electrode line for blue and to discharge the charges stored in the sixth and seventh charge storage devices to the electrode line for blue at a given timing.

26. The display element driving device according to claim 18, the display elements each being a capacitive display element that receives a given voltage, the first and second charge storage devices to respectively receive the digital data DY1 and DV1 and to store charges according to values of the digital data DY1 and DV1, the first and second connection devices to electrically connect the first and second charge storage devices to the electrode line for red and to discharge the charges stored in the first and second charge storage devices to the electrode line for red at a given timing,

the second D/A converter including:

third, fourth, and fifth charge storage devices to respectively receive the digital data DY1, DU1, and DV1 and to store charges according to values of the digital data DY1, DU1, and DV1; and

third, fourth, and fifth connection devices to electrically connect the third, fourth, and fifth charge storage devices to the electrode line for green and to discharge the charges stored in the third, fourth, and fifth charge storage devices to the electrode line for green at a given timing,

the third D/A converter including:

sixth and seventh charge storage devices to respectively receive the digital data DY1 and DU1 and to store charges according values of the digital data DY1 and DU1; and

sixth and seventh connection devices to electrically connect the sixth and seventh charge storage devices to the electrode line for blue and to discharge the charges stored in the sixth and seventh charge storage devices to the electrode line for blue at a given timing,

the fourth D/A converter including:

eighth and ninth charge storage devices to respectively receive the digital data DY2 and DV1 and to store charges according to values of the digital data DY2 and DV1; and

eighth and ninth connection devices to electrically connecting the eighth and ninth charge storage devices to the second electrode line for red and to discharge the charges stored in the eighth and ninth charge storage devices to the second electrode line for red at a given timing,

the fifth D/A converter including:

tenth, eleventh, and twelfth charge storage devices to respectively receive the digital data DY2, DU1, and DV1 and to store charges according to values of the digital data DY2, DU1, and DV1; and

tenth, eleventh, and twelfth connection devices to electrically connect the tenth, eleventh, and twelfth charge storage devices to the second electrode line for green and to discharge the charges stored in the tenth, eleventh, and twelfth to the second electrode line for green at a given timing, and

the sixth D/A converter including:

thirteenth and fourteenth charge storage devices to respectively receive the digital data DY2 and DU1 and to store charges according to values of the digital data DY2 and DU1; and

thirteenth and fourteenth connection devices to electrically connect the thirteenth and fourteenth charge storage devices to the second electrode line for blue and to discharge the charges stored in the thirteenth and fourteenth charge storage devices to the electrode line for blue at a given timing.

27. The display element driving device according to claim 17,

digital data DR1, DG1, and DB1 of an RGB signal being further provided, and

a YUV mode being set to apply the voltages VR1, VG1, and VB1 based on the digital data DY1, DU1, and DV1, and

an RGB mode being set to apply the voltages VR1, VG1, and VB1 based on the digital data DR1, DG1, and DB1.

28. The display element driving device according to claim 27, further comprising a device to, in the RGB mode, input the digital data DR1 to the first D/A converter in place of the digital data DY1 and DV1, to input the digital data DG1 to the second D/A converter in place of the digital data DY1, DU1 and DV1, and to input the digital data DB1 to the third D/A converter in place of the digital data DY1 and DU1.

29. The display element driving device according to claim 18, digital data DR1, DG1, DB1, DR2, DG2, and DB2 of an RGB signal being further provided, and

a YUV mode being set to apply the voltages VR1, VG1, VB1, VR2, VG2, and VB2 based on the digital data DY1, DU1, DV1, and DY2, and

an RGB mode being set to apply the voltages VR1, VG1, VB1, VR2, VG2, and VB2 based on the digital data DR1, DG1, DB1, DR2, DG2, and DB2.

30. The display element driving device according to claim 29, further comprising a device to, in the RGB mode, input the digital data DR1 to the first D/A converter in place of the digital data DY1 and DV1, to input the digital data DG1 to the second D/A converter in place of the digital data DY1, DU1 and DV1, to input DB1 to the third D/A converter in place of DY1 and DU1, to input the digital data DR2 to the fourth D/A converter in place of the digital data DY2 and DV1, to input the digital data DG2 to the fifth D/A converter in place of the digital data DY2, DU1, and DV1, and to input the digital data DB2 to the sixth D/A converter in place of the digital data DY2 and DU1.

31. The display element driving device according to claim 9, the D/A converter being a first D/A converter, the electrode line being a first electrode line for red, the display element driving device applying first and second voltages for red, blue, and green to first and second electrode lines for red, green, and blue to which display elements are respectively electrically connected, the first and second voltages being generated based on digital data of a YUV signal, the display element driving device further comprising:

a first transfer line for sequentially transferring digital data DY1, DY2, DY3, DY4 ...DY2K-1, DY2k ...DYL of the YUV signal;

a second transfer line for sequentially transferring digital data DV1, DU1, DV2, DU2 ...DVK, DUK ...DVL/2, DUL/2 or DU1, DV1, DU2, DV2 ...DUK, DVK ...DUL/2, DVL/2 of the YUV signal;

a first latch for latching the digital data DY2k-1 of the first transfer line;

a second latch for latching the digital data DVK or DUK of the second transfer line at a timing that is substantially the same as the first latch;

a third latch for latching the digital data DUK or DVK of the second transfer line;

a fourth latch for latching the digital data DY2K of the first transfer line at a timing that is substantially the same as the third latch; and

second to sixth D/A converters, the first to sixth D/A converters for generating first and second applied voltages for red, green, and blue based on the digital data DY2k-1, DVK, DUK, and DY2K latched by the first to fourth latches.

32. A display device, comprising:

the display element driving device according to claim 31; and

a display element driven by the display element driving device.

33. The display device according to claim 32, further comprising a substrate on which a switching element consisting of a thin-film transistor or a thin-film nonlinear element is formed, the display element driving device being integrally formed on the substrate.

34. An information processing apparatus, comprising:

the display device according to claim 32; and

at least one image signal output device to output an image signal to the display device.

35. An information processing apparatus, comprising:

the display device according to claim 33; and

at least one image signal output device to output an image signal to the display device.

36. An information processing apparatus, comprising:

the display element driving device according to claim 9;

a display device including a display element driven by the display element driving device;

a first image signal output device to output digital data of a YUV signal; and

a second image signal output device to output digital data of an RGB signal,

the display element driving device further comprising:

a device to directly convert the digital data of the YUV signal into analog applied voltages for red, green, and blue to output the analog applied voltages when the digital data of the YUV signal is input, and to convert the digital data of the RGB signal into analog applied voltages for red, green, and blue to output the analog applied voltages when the digital data of the RGB signal is input.

37. A display device, comprising:

a display element driving device, the display element driving device including a D/A converter, the D/A converter having a first section to receive first digital data and a second section to receive second digital data, the D/A converter combining the first and second digital data during D/A conversion and outputting an output voltage based on the first digital data and second digital data to a single signal line;

a display element that receives and is driven by the output voltage outputted to the single signal line; and

a substrate on which a switching element selecting a display element and including a thin-film transistor or a thin-film non-linear element is formed,

the display element driving device being integrally formed on the substrate.

38. A display device, comprising:

a display element driving device, the display element driving device including a D/A converter, the D/A converter having a first section to receive first digital data and a second section to receive second digital data, the D/A converter combining the first and second digital data during D/A conversion and outputting an output voltage based on the first digital data and second digital data to a single signal line; and

a display element that receives and is driven by the output voltage outputted to the single signal line.

39. A display element driving method for applying a voltage based on a given image signal to an electrode line electrically connected to a capacitive display element having one side to which a given voltage is applied, the method comprising:

inputting first digital data associated with the image signal to a first charge storage device, and storing a charge corresponding to a value of the first digital data in the first charge storage device;

inputting second digital data associated with the image signal to a second charge storage device, and storing a charge corresponding to a value of the second digital data in the second charge storage device, the first charge storage device electrically connected to the electrode line and the charge stored in the first charge storage device being discharged to the electrode line at a given timing, the second charge storage device and the electrode line electrically connected to each other, and the charge stored in the second charge storage device being discharged to the electrode line at a same timing as the given timing.

40. The display element driving method according to claim 39,

inputting the first and second digital data comprising inputting digital data DY1 and DV1, respectively; and

storing the first and second digital data comprising storing the inputting the digital data DY1 and DV1, respectively, to apply a voltage VR1 to the electrode line for red based on a relational expression VR1 = aDY1 + bDB1, the electrode line for red electrically connected to a first display element,

the method further comprising:

inputting digital data DU1 and the digital data DY1 and DV1, and applying voltage VG1 to an electrode line for green based on a relational expression VG1 = cDY1 + dDU1 + eDV1, the electrode line for green electrically connected to a second display element; and

inputting the digital data DY1 and DU1, and applying voltage VB1 to an electrode line for blue based on a relational expression VB1 = fDY1 + gDU1, the electrode line for blue electrically connected to a third display element.

41. The display element driving method according to claim 39, the electrode line being a first electrode line for red, first and second voltages for red, blue, and green applied to first and second electrode lines for red, green, and blue to which display elements are respectively electrically connected, the first and second voltages generated based on digital data of a YUV signal, the method further comprising:

sequentially transferring digital data DY1, DY2, DY3, DY4 ...DY2K-1, DY2k ...DYL of the YUV signal to a first transfer line;

sequentially transferring digital data DV1, DU1, DV2, DU2 ...DVK, DUK ...DVL/2, DUL/2 or DU1, DV1, DU2, DV2 ...DUK, DVK ... DUL/2, DVL/2 of the YUV signal to a second transfer line;

latching the digital data DY2k-1 of the first transfer line;

latching the digital data DVK or DUK of the second transfer line at a timing which is substantially the same as that of the first latch;

latching the digital data DUK or DVK of the second transfer line;

latching the digital data DY2K of the first transfer line at a timing which is substantially the same as that of the third latch; and

generating the first and second applied voltages for red, green, and blue based on the latched DY2k-1, DVK, DUK, and DY2K.

42. A display element driving device, comprising:

a D/A converter to apply a voltage based on a given image signal to an electrode line that is electrically connected to a capacitive display element having one side to which a given voltage is applied, the D/A converter including:

a first charge storage capacitor that receives first digital data corresponding to the image signal and that stores a charge corresponding to a value of the first digital data;

a second charge storage capacitor that receives second digital data corresponding to the image signal and that stores a charge corresponding to a value of the second digital data;

a first switch that electrically connects the first charge storage capacitor to the electrode line and that discharges the charge stored in the first charge storage capacitor to the electrode line at a given timing; and

a second switch that electrically connects the second charge storage capacitor to the electrode line and that discharges the charge stored in the charge storage capacitor to the electrode line at a substantially same timing as the given timing.

43. The display device according to claim 38, the display element driving device applying voltages VR1, VG1, and VB1 generated based on digital data DY1, DU1, and DV1 of a YUV signal to electrode lines of red, green, and blue to which display elements are respectively electrically connected, the D/A converter being a first D/A converter, the first D/A converter respectively receiving the digital data DY1 and DV1 and applying the voltage VR1 to the electrode line for red based on a relational

expression VR1 = aDY1 + bDV1, the display element driving device further comprising:

a second D/A converter that respectively receives the digital data DY1, DU1, and DV1 and applies the voltage VG1 to the electrode line for green based on a relational expression VG1 = cDY1 + dDU1 + eDV1; and

a third D/A converter that respectively receives the digital data DY1 and DU1 and applies the voltage VB1 to the electrode line for blue based on a relational expression VB1 = fDY1 + gDU1.

44. The display element driving device according to claim 38, the D/A converter being a first D/A converter, the electrode line being a first electrode line for red, the display element driving device applying first and second voltages for red, blue, and green to first and second electrode lines for red, green, and blue to which display elements are respectively electrically connected, the first and second voltages being generated based on digital data of a YUV signal, the display element driving device further comprising:

a first transfer line for sequentially transferring digital data DY1, DY2, DY3, DY4 ...DY2K-1, DY2k ...DYL of the YUV signal;

a second transfer line for sequentially transferring digital data DV1, DU1, DV2, DU2 ...DVK, DUK ...DVL/2, DUL/2 or DU1, DV1, DU2, DV2 ...DUK, DVK ...DUL/2, DVL/2 of the YUV signal;

a first latch for latching the digital data DY2k-1 of the first transfer line;

a second latch for latching the digital data DVK or DUK of the second transfer line at a timing that is substantially the same as the first latch;

a third latch for latching the digital data DUK or DVK of the second transfer line;

a fourth latch for latching the digital data DY2K of the first transfer line at a timing that is substantially the same as the third latch; and

second to sixth D/A converters, the first to sixth D/A converters for generating first and second applied voltages for red, green, and blue based on the digital data DY2k-1, DVK, DUK, and DY2K latched by the first to fourth latches.

45. The display device according to claim 38, further comprising:

a first image signal output device for outputting digital data of a YUV signal, and

a second image signal output device for outputting digital data of an RGB signal,

the D/A converter directly converting the digital data of the YUV signal into analog applied voltages for red, green, and blue to output the analog applied voltages when the digital data of the YUV signal is input, and converting the digital data of the RGB signal into analog applied voltages for red, green, and blue to output the analog applied voltages when the digital data of the RGB signal is input.

46. The display element driving method according to claim 39, further comprising:

inputting third to Nth digital data corresponding to the image signal to third to Nth charge storage devices, and storing charges corresponding to values of the third to Nth digital data in the third to Nth charge storage devices, the third to Nth charge storage devices electrically connected to the electrode line, and the charges stored in the third to Nth charge storage devices charged to the electrode line at a same timing as the given timing.

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